ing the seeds with a photomicrographic apparatus, enlarging them a sufficient number of times, it is easy to bring the markings within the range of size where the use of the planimeter becomes a practical matter.

H. F. ROBERTS
KANSAS STATE AGRICULTURAL COLLEGE,
April 28

SURPLUS BISON FOR MUSEUMS

THERE is now a great surplus of male bison in the main Canadian herd at Buffalo Park, Wainright, Alberta. This is the largest herd of bison in the world, numbering 3,561 and is maintained by the Canadian government under the administration of the Dominion Parks Branch of the Department of the Interior.

Besides these 3,561 bison, there are also 8 at the Rocky Mountains Park, Banff, Alberta, and 182 at Elk Island Park, Lamont, Alberta. In 1909, there was a total of 685 bison at Buffalo Park, 118 were imported during 1910, 1911 and 1912 from the Pablo herd in Montana, and 10 bison cows from the Rocky Mountains Park during the winter of 1913–14. With the exception of these the increase has been due to natural causes.

It is said that elsewhere the percentage of male to female calves has been higher among bison in semi-captivity within enclosed parks than was the case when the herds freely roamed the plains. This has proved to be the case in the main Canadian herd, so that there is a great surplus of male bison that are not needed for herd purposes.

It is proposed to dispose of these surplus male bison for the nominal sum of $250 each to bonafide natural history museums of Canada and the United States, and further information can be obtained by such museums from Mr. J. B. Harkin, Commissioner of Dominion Parks, Department of the Interior, Ottawa, Ontario, Canada.

This should prove a splendid opportunity not only to secure skins for mounted specimens and groups, but also for museums to send their preparators to Buffalo Park to secure photographs, color sketches and accessories for habitat groups, and to secure skeletons, anatomical preparations of internal organs and parasites.

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INFORMATION SERVICE FOR EXPERIMENTAL BIOLOGISTS

TO THE EDITOR OF SCIENCE: The Federation of American Societies for Experimental Biology, comprising the sciences of physiology, biological chemistry, pharmacology and experimental pathology, is now organizing an information service to serve as a medium of communication between persons seeking positions for teaching or research and institutions that wish to fill vacancies in these sciences. Persons, whether members of the federation or not, and institutions desiring to avail themselves of the service may communicate with Professor Edgar D. Brown, secretary of the executive committee of the federation, University of Minnesota, Minneapolis, Minn., and such information as is available will be supplied without cost to the applicant. Applicants are requested to supply the service with ten copies of their application, which should cover the following points:

1. *For the Person seeking a Position:* age; college and university training; degrees received; academic or other positions held; list of scientific papers published; membership in scientific societies; position and salary desired; copies of letters of recommendation; names and addresses of persons who can supply further information regarding the applicant; and any other information that the applicant desires to submit.

2. *For the Institution desiring to fill a Vacancy:* title of vacant position; date to be filled; requirements as to teaching or other routine work and research; salary to be paid; prospects of tenure of office and advancement; and any other information that the institution desires to submit.

The service does not undertake to recommend or to pass judgment upon applicants. It aims merely to serve as a clearing-house for such information as the above and to

bring into touch with one another candidates for positions and vacancies to be filled.

E. D. Brown,
University of Minnesota, *Secretary*

SCIENTIFIC BOOKS

The Mineral Deposits of South America. By Benjamin L. Miller, professor of geology, Lehigh University, and Joseph T. Singewald, associate professor of economic geology, Johns Hopkins University. New York, McGraw-Hill Book Company, Inc. 1919. Pp. 598, with 61 figs.

South America is a continent richly endowed with mineral resources: In Brazil are the largest high-grade iron-ore deposits in the world; at Chuquicamata, Chile, is the largest copper deposit in the world and the copper resources of Chile are second only to those of the United States; the nitrates of Chile constitute a world monopoly of that commodity; the tin lodes of Bolivia are by far the most productive in the world, their annual output being seven fold that of their nearest competitor; the world's greatest vanadium deposits are in Peru; and the only considerable source of platinum outside of Russia is in Colombia. The mineral deposits are not only of great importance commercially but are also of deep interest scientifically; and, as the present book by Professors Miller and Singewald shows, not more than a beginning has been made in solving the geologic problems they present.

The book under review, as we are told in the preface, is "the outcome of an extended trip through South America made by the authors in 1915." It is essentially a digest of available information on the mineral deposits of that continent, supplemented, however, by data the authors obtained during the visits, necessarily hasty, that they made to many of the mineral deposits of Brazil, Chile and Peru.

The opening chapter of the volume gives an outline of the geography, general geology and mineral resources of South America. It sketches also the history of the growth of the mineral industry, discusses the relation of mining to other industries, and outlines the probable trend of the future development. In view of the ground covered, the chapter, comprising thirty-two pages, is somewhat scant. It could be improved also by the addition of a series of outline maps of the continent showing quantitatively where the more important mineral commodities are produced, and by the insertion of statistical tables and diagrams showing the relation of South America's mineral output to that of the rest of the world. Such aids in giving the reader generalized views of the continent as a whole are conspicuously few in the present volume, but their urgent desirability should be considered by the authors when a new edition is planned. In places throughout the book there is an unnecessarily abundant use of local Latin-American terms, for most of which the authors could easily have substituted perfectly good English equivalents.

The remaining eleven chapters take up in alphabetical order the countries of South America. The description of the mineral resources of each is introduced by a summary of production. In places some statistical errors have crept in, as on page 77, where the outputs of lead, zinc and tin of Bolivia are given in terms of metal, whereas the figures cited are in reality those of ore or concentrate. Nor is it mentioned that the unit employed is the metric ton. These oversights are pointed out in passing, because current international statistics of mineral output are commonly vitiated by similar lapses. The summary of mineral production is followed by sketches of the topographic and geologic features of the country, of the distribution of the mineral deposits, and of the occurrence of the chief mineral resources. This general treatment is followed by more detailed descriptions of the important deposits and districts. Each chapter closes with a selected bibliography, the number of entries ranging up to 225 titles for the chapter on Chile. The entries are generally accompanied by brief synoptic characterizations. It is not always indicated that some Latin-American entries are merely translations of papers that appeared originally in French, German, American or other publications.

One of the notable sections of the volume